8166

Diag. Cit. Nos. 1208-2 and 1107.

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. ECFP-1354 *Office No.* H-8166

LOCALITY

State Massachusetts

General locality Cape Cod Bay

Locality Indian Hill to Rocky Point

19 54-55

CHIEF OF PARTY

M. T. Paulson and C. R. Reed

LIBRARY & ARCHIVES

DATE December 3, 1956

B-1870-1 (1)

8166

Form 537
(Ed. June 1946)

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

REGISTER No. H-8166

Field No. ECFP-1354

State MASSACHUSETTS

General locality CAPE COD BAY

Locality INDIAN HILL TO ROCKY POINT

Scale 1:10,000 Date of survey 15-19 July 1955 7/8 to 10/28/54

Instructions dated 29 January 1954; supplemental 17 February 1955

Vessel East Coast Field Party Launch CS-172

Chief of party Marvin T. Paulson & C.R. Reed

Surveyed by Edwin K. McCaffrey & R.B. Noble

Soundings taken by ~~fathometer~~, graphic recorder, hand lead, ~~wire~~

Fathograms scaled by Party personnel

Fathograms checked by E.K. McCaffrey & Norfolk District Office

Protracted by A.K. Schugeld

Soundings penciled by A.K. Schugeld

Soundings in ~~fathoms~~ feet at MLW ~~MLLW~~ and are true depths

REMARKS:

U. S. GOVERNMENT PRINTING OFFICE 16—66520-1

SUPPLEMENTARY DESCRIPTIVE REPORT
TO ACCOMPANY

Hydrographic Sheet H-8166

EAST COAST FIELD PARTY MARVIN T. PAULSON, CHIEF OF PARTY

PROJECT 1368 1955 SCALE 1:10,000

* * * * * * * * * * * * *

PROJECT This survey was accomplished under instructions dated 29 January 1954, and Supplemental Instructions 22/MEK FP-East Coast dated 17 February 1955.

SURVEY LIMITS AND DATES The survey limits are identical with those outlined in the original of this report. Sounding lines were run along the eastern limits of this sheet to effect a better junction with survey H-6563. (1940)

The balance of this survey consisted of development, as designated by the Washington Office, within the survey limits.

Work on the supplementary survey began 15 July and terminated 19 July 1955.

VESSELS AND EQUIPMENT Launch Number CS-172 was used in this survey. It operated from a mooring east of State Pier at Plymouth, Massachusetts.

Echo soundings were obtained with graphic recorder No. 77, operated with transducers mounted inboard in the launch bilges.

TIDES AND CURRENTS The tide station was maintained at State Pier, Plymouth Harbor, Massachusetts. The tide note is appended to this report. No current observations were made on this project.

SMOOTH SHEET: The smooth sheet is to be plotted by the Norfolk Processing Office.

CONTROL STATIONS The control consisted mainly of triangulation and photo-hydro stations. There were no additions to the control stations previously established for this survey. A list of signals used is appended to this report.

SHORELINE AND TOPOGRAPHY There were no additions or revisions to the shoreline and topographic details of the original (1954) survey.

SOUNDINGS Soundings were taken by graphic recorder, sounding pole and hand lead. Bottom samples were obtained using an armed hand lead.

CONTROL OF HYDROGRAPHY The sounding lines on this survey were controlled by three point sextant fixes to appropriate control stations. Fixes were taken at 1½ minute intervals. No unusual position jumps were observed in changing fixes.

Check angles were taken to verify the location of all detached positions.

ADEQUACY OF SURVEY This survey is considered adequate to supersede prior surveys.

CROSSLINES No additional crosslines were run on this survey. Areas covered by development lines showed good agreement where these lines crossed lines of the prior survey.

COMPARISON WITH PRIOR SURVEYS The eastern limit of this survey was extended to effect a better junction with H-6563 (1942). Good sounding agreement was noted; with one exception, the *36 foot shown on H-6563 at latitude 41°-54.65; longitude 70°-30.37' was not found. The area was closely covered by a system of sounding lines (position 1-15 c day) and showed depths of 55 - 65 feet over the area. *36 verified by wire drag (1915-16)

COMPARISON WITH CHART The following discussion will be concerned with charted items not verified by the 1954 survey. Soundings were transferred from Chart 120% Scale 1:80,000 to the boat sheet in green ink. Scaled distances below refer to boat sheet distances following transfer from 1:80,000 chart to 1:10,000 sheet. Distances of 200m and below verify charted soundings.

Latitude	Longitude	Chart	1955 Survey	Remarks
41°-56.5[8]'	70°-33.7[5]'	6	8.8	This item was one recommended for development following a review of the 1954.survey. Fathometer depths of 8.8 feet and 10.2 feet occur 200m W of the charted 6. this whole area appears to be an extensive ledge. It is recommended that the 6 foot sounding be retained because of the rocky nature of the shoal involved. Concur; 6 ft. retained from H-3776 (1915-16) W.D.
41°-56.[33]'	70°-33.[82]'	----	----	A 3.0 1.8 foot sounding was recorded between pos.37-38a. This occurs 70m south of a charted sunken rock. Position 41a was a rock bare 4 feet at low water. This was 100m south of a charted rock awash. These verify rocks located on pos.64c of the 1954 survey.
41°-53.[79]'	70°-31.0[5]'	6	7	This charted feature is Stellwagen rock. The least depth recorded was a pole sounding of 7.4 feet, position 109b. This is the least depth on the rock.
41°-54.6[6]'	70°-32.3[5]'	12	[8] 11	A fathometer sounding of 10.8 ft. on Pos.50-51c verifies a 10 ft. sdg. from the 1954 survey. These occur 90m north of the charted 12. of B.C (20-21a)

The 5 ~~four~~ foot sounding at 41°-54.5; 70°-32.0' recorded on the 1954 survey is accepted ~~evidently a stray as originally believed~~. A sounding line was re-run near ~~over~~ this spot (46-47c) and the least depth recorded was 17.2 feet with no shoaling indicated. (Chart 5 ff.)

Development of the charted 19 foot wire drag sounding at 41°-53.6'; 70°-30.9' indicated depths of 31-37 in its immediate vicinity. A sounding of 24.8 feet was recorded 150m west (position 123-124b). It is recommended that the 19 foot sounding be retained. (19 retained)

DANGERS AND SHOALS There are no new dangers and shoals to be reported.

COAST PILOT No additions or changes to Coast Pilot are recommended since the original report on H-8166.

AIDS TO NAVIGATION No fixed or floating aids to navigation are located on this survey.

LANDMARKS There are no new charting landmarks to be reported.

GEOGRAPHIC NAMES There are no changes or additions to geographic names to report.

MISCELLANEOUS Weather stamps in the sounding records used the Beaufort Wind Scale, and letter symbols for the state of the weather.

Predicted tides were used to reduce all boat sheet soundings.

Actual tide reducers are entered on the fathogram for the convenience of the Processing Office and at their suggestion. Velocity corrections are included in this report.

Respectfully submitted,

Edwin K. McCaffrey

Edwin K. McCaffrey
ENS., USC&GS

Approved and forwarded

Marvin T. Paulson

Marvin T. Paulson
Chief of Party

APPROVAL SHEET FOR

HYDROGRAPHIC SURVEY H-8166 (ECFP 1354)

This report is a supplement to the report submitted with the 1954 survey records. The survey consisted of development of shoals and additional lines to meet spacing requirements as noted by the Washington Office Review.

The sheet has been reviewed by me and is approved as complete and no additional surveys required. The survey was accomplished by a detached party so supervision and inspection of the sheet and records could not be made daily, but inspections were made periodically throughout the season to check records, progress, and make recommendations.

Your attention is invited to a modified method of entering sounding reducers. By verbal approval from the Chief, Coastal Surveys Division, and with special instructions from the Norfolk District Processing Office, Tide Reducers have been entered directly on the fathogram instead of the usual method of entering the reducers in the hydrographic Record Volumes. The Fathometer Corrections have been listed and are a part of this report, and these also have not been entered in the Record Volumes.

A separate report will be written in detail regarding the purpose, method, and results of this new method of entering fathometer sounding reducers.

The soundings were recorded in the usual manner and the fathograms scanned to check the record.

Marvin T. Paulson

Marvin T. Paulson
LCdr., C&GS, OinC.

TIDE NOTE TO ACCOMPANY

HYDROGRAPHIC SURVEY SHEET H-8166

Tide data for the reduction of soundings were obtained from a portable automatic tide gage at State Pier, Plymouth Harbor, Mass. This gage was maintained by party personnel. The mean low water plane of reference was furnished by the Washington Office.

STATION	LATITUDE	LONGITUDE	MLW ON STAFF
State Pier, Plymouth, Mass.	41°-57.57'	70°-39.77'	0.1'

VELOCITY CORRECTIONS

Grpahic recorder No. 77 and launch CS-172 were used exclusively in this survey. This sheet was one of three comprising project 1368. Bar checks were taken for all three sheets, and for convenience were tabulated in one abstract, enclosed in the original of H-8164. The correct initial setting for this launch and recorder is 0.0 feet. Any deviation from this requires an index correction be applied to soundings. A summary of the velocity corrections follows.

Corrections in Feet

A Scale

Depth from	Depth to	correction
0.0	5.0	0.0
5.2	9.4	+0.2
9.6	18.0	+0.4
18.2	26.6	+0.2
26.8	31.2	0.0
31.4	37.0	-0.2
37.2	55.0	-0.4

B Scale

Depth from	Depth to	correction
35.0	39.0	+0.8
39.2	42.0	+0.6
42.2	44.6	+0.4
44.8	47.0	+0.2
47.2	50.0	0.0
50.2	54.0	-0.2
54.2	58.0	-0.4
58.2	62.0	-0.6
62.5	66.0	-0.8
66.5	70.0	-1.0
70.5	74.0	-1.2
74.5	78.0	-1.4
78.5	82.0	-1.6
82.5	86.0	-1.8
86.5	90.0	-2.0

C Scale

Depth from	Depth to	correction
70.0	74.5	-0.6
75.0	78.5	-0.8
79.0	82.5	-1.0
83.0	86.5	-1.2
87.0	90.5	-1.4
91.0	94.5	-1.6
95.0	98.5	-1.8
99.0	102.5	-2.0
103.0	limit	-2.2

APPROVAL SHEET FOR

HYDROGRAPHIC SURVEY H-8166 (ECFP 1354)

This report is a supplement to the report submitted with the 1954 survey records. The survey consisted of development of shoals and additional lines to meet spacing requirements as noted by the Washington Office Review.

The sheet has been reviewed by me and is approved as complete and no additional surveys required. The survey was accomplished by a detached party so supervision and inspection of the sheet and records could not be made daily, but inspections were made periodically throughout the season to check records, progress, and make recommendations.

Your attention is invited to a modified method of entering sounding reducers. By verbal approval from the Chief, Coastal Surveys Division, and with special instructions from the Norfolk District Processing Office, Tide Reducers have been entered directly on the fathogram instead of the usual method of entering the reducers in the hydrographic Record Volumes. The Fathometer Corrections have been listed and are a part of this report, and these also have not been entered in the Record Volumes.

A separate report will be written in detail regarding the purpose, method, and results of this new method of entering fathometer sounding reducers.

The soundings were recorded in the usual manner and the fathograms scanned to check the record.

Marvin T. Paulson

Marvin T. Paulson
LCdr., C&GS, OinC.

STATISTICS

SHEET H-8166

DATE 1955	DAY LTR	VOL. NO.	NO. POSITIONS	STAT.MI. SDG.LINES
15 July	a	1	60	9.0
18 July	b	1	129	16.0
19 July	c	2	51	6.3
			240	33.3

Form 537
(Ed. June 1946)

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

REGISTER No. H-8166

Field No. ECFP-1354

State Massachusetts

General locality Cape Cod Bay

Locality Indian Hill to Rocky Point

Scale 1/10,000 Date of survey 7/8 - 10/28/54

Instructions dated 1/29/54

Vessel Launches CS-172 and CS-82 EAST COAST FIELD PARTY

Chief of party Clarence R. Reed

Surveyed by Edwin K. McCaffrey & R.B. Noble

Soundings taken by ~~fathometer~~, graphic recorder, hand lead, ~~wire~~

Fathograms scaled by Party personnel

Fathograms checked by E.K. McCaffrey & Norfolk District Office

Protracted by A.K. Schugeld

Soundings penciled by A.K. Schugeld

Soundings in ~~fathoms~~ feet at MLW ~~MLLW~~

REMARKS: See attached descriptive report covering additional work accomplished during the 1955 season

1:1 1/2 sheet in D.R.

See Xref to D.R.

U. S. GOVERNMENT PRINTING OFFICE 16—66520-1

NOTES FOR DESCRIPTIVE REPORT
TO ACCOMPANY
Hydrographic Sheet H-8166, (FIELD NUMBER ECFP 1354)
Indian Hill to Rocky Point
Cape Cod Bay, Massachusetts

EAST COAST FIELD PARTY CLARENCE R. REED, CHIEF OF PARTY

PROJECT CS-368 1954 SCALE 1:10,000

* * * * * * * * * * * * *

PROJECT This survey was accomplished under instructions dated 29 January 1954 for a new Hydrographic Survey of Plymouth Bay and vicinity.

SURVEY LIMITS & DATES The survey on Sheet H-8166 (FIELD NO. ECFP 1354) includes that western part of Cape Cod Bay off Manomet Point, Massachusetts. In general, it consists of a strip 1.3 miles wide running southeast and south along the coast from Rocky Point to Indian Hill.

Junctions were made with prior survey H-6562 (1940) on the south, H-6563 (1940) on the east & northeast and with contemporary survey H-8165 (1954-55) on the west.

Work on this survey began 8 July and concluded 28 October 1954.

VESSELS AND EQUIPMENT Launches number CS-172 and CS-82 were used consecutively in this survey. Both operated from a mooring east of State Pier at Plymouth, Massachusetts.

Echo soundings were obtained with Graphic Recorders number 71S and 77. Both operated with transducers mounted inboard in the launches. Recorder number 71S was used in Launch CS-172 for the period 11 June through 30 August, 1954. Recorder number 77 was used in Launch CS-82 for the period 16 September through 28 October 1954.

TIDES AND CURRENTS The tide note is appended to this report. No current observations were made on this project.

SMOOTH SHEET The smooth sheet is to be plotted by the Norfolk Processing Office.

CONTROL STATIONS The control consisted mainly of triangulation and Photo-hydro stations. The latter were plotted on Air-photo Compilation Sheets T-11178 and T-11180 by Photogrammetrist G. E. Varnadoe. These were transferred to the boat sheet by officers of this party.

Marked topographic station PRIS 1953 was recovered and used as a control station.

All necessary hydrographic stations were located by three or more sextant cuts to the station.

SHORELINE AND TOPOGRAPHY The shoreline and topographic details were transferred from Air-photo Compilation Sheets T-11178 and T-11180. (1952-53)

Detached fixes were taken in the vicinity of White Horse Rock and Manomet Point to supplement air photo locations of foul areas and half-tide rocks.

SOUNDINGS Soundings were taken by Graphic Recorder, sounding pole and hand lead. Bottom samples were obtained using an armed hand lead.

CONTROL OF HYDROGRAPHY The sounding lines on this survey were controlled by means of three point sextant fixes. No unusual position jumps were observed in changing control stations. Fixes on sounding lines were taken at 1 minute and 1½ minute intervals.

Check angles were taken to verify the location of all detahced positions.

ADEQUACY OF SURVEY This survey is considered adequate to supersede prior surveys in the portions that are complete. For additional work required see note by Chief of Party at end of report. See Report of add'l work of 1955

CROSSLINES Crosslines were run as instructed with satisfactory (boat sheet) agreement at all crossings.

COMPARISON WITH PRIOR SURVEYS (see Review, #5) A comparison with prior surveys Nos. H-6562 and H-6563 (1950) showed excellent agreement where junctions were made. (See Chief of Party note at end of report)

There are no surveys of recent date covering the inshore portions of this survey. A comparison with survey H-3413 of 1912 showed a few discrepancies in the vicinity of Manomet Point. These will be discussed in detail in the Comparison with the Latest Chart.

COMPARISON WITH CHART

LATITUDE	LONGITUDE	CHART 1208 (from H.422 (1853) superseded by H.8166 2ma)	1954 SURVEY	REMARKS
41° 58.0'	70° 34.8'	36 ←	42	see Review, #5
41° 57.8'	70° 34.5'	40	~~46~~ 40-45	
41° 56.9'	70° 34.0'	19	32	see Review, #5
41° 56.5	70° 33.75'	6 ← 6 retained from H-3776 (1916) W.D.	14	The least depth located was a fathometer sounding of 13.8' See Chief of Party note at end of report.
41° 57.5'	70° 33.6'	57	~~45~~ 43	
41° 56.4' (approx.)	70° 33.7'			The rocky islet, rock awash and sunken rock charted in this immediate vicinity are incorrect. There is no rock bare at high water here. Two rocks awash were located on "c" day (positions 63 to 64, Vol. 2 page 21) and a sunken ledge was found on "d" day (positions 2 to 3, Vol. 2 page 31). It is recommended that these charted features be deleted and replaced by the rocks awash found by the present survey. The sunken rock symbol should be replaced by some of the rocky soundings obtained on "d" day. (chart revised)
41° 55.7'	70° 32.4'	7	6	
41° 55.9'	70° 32.1'	*17	~~36~~ 31	The 18' curve is not as extensive as charted. *Disregard 17; considered out of position
41° 55.8'	70° 31.9'	25	~~28~~ 21-26	
41° 55.6'	70° 31.1'	44	38-40	
41° 55.8'	70° 31.5'	26 ← 26 retained from H-3776 W.D.	~~26~~ 33	The 30' curve is not as extensive as charted. The soundings referred to exist as separate shoals north of the 30 curve and should be so charted.

COMPARISON WITH CHART (CONT'D)

LATITUDE	LONGITUDE	CHART 1208	1954 SURVEY	REMARKS
			retained from W.D.	
41° 55.5'	70° 31.6'	15	18	—100 meters south
41° 55.1'	70° 31.6'	24	~~18~~ 14	There are many separate rocks shoaler than 18' in this area. ~~The least depth of 11.8 was a fathometer sounding on 200 m. North of the present sounding.~~ In addition a ledge with a least depth of 12' lies midway between Mary Ann Rocks. It is recommended these least depths be charted.
41° 55.15'	70° 31.~~4~~37	16	15	
41° 55.0'	70° 31.9'	6	15	

Mary Ann Rocks were located as charted. The southernmost one bares 3' at MLW. The northern one bares 1/5 at MLW. Their locations are listed on page 69 of Volume 4.

Stone Horse Rocks is actually a single large rock which bares 3 feet at mean low water and not two separate islets as charted. The location as shown on page 70 volume 4 is that of the highest point. The position verifies the charted position.

Stellwagen Rock was located as charted. The least sounding obtained was ~~8.9~~ 9.0 feet ~~fathometer~~. The location is given on page 34 volume 4. The rock is a pinnacle occurring in depths of 34 feet. A ledge with least depth of ~~24~~ 23-24 feet lies southeast of the rock. The *19 feet charted 400 meters southeast of Stellwagen Rock could not be verified. It is recommended that charted soundings in the area be modified to agree with the present survey. *19 retained from H-3776 W.D.

DANGERS AND SHOALS Several new dangers and shoals located during the survey are recommended for charting.

A least depth of ~~13.6~~ 13.6 feet was found in latitude 41 53.78', longitude 70 31.8~~4~~3'. A depth of ~~8.6~~ 9.0 lies 190 m. due west of here. These depths were recorded on a continuous sounding line (22 g - 24 g) on page 30 volume 4. The 18 foot curve in this vicinity should be extended in a northeastward direction to indicate these depths.

PRELIMINARY REVIEW BY CHART DIVISION - CHART 1208 Item 6 - The sunken wreck was beyond the limits of visual control for this survey and was not investigated.

The tank at Manomet was located by Air-photo methods and is submitted on Form 567 for charting as a landmark.

COAST PILOT A separate report on Coast Pilot will be made.

AIDS TO NAVIGATION There were no fixed or floating aids to navigation located in this survey.

LANDMARKS Landmarks will be submitted separately on Form 567.

GEOGRAPHIC NAMES There are no changes or additions to Geographic Names to report.

Respectfully submitted,

Edwin K. McCaffrey

Edwin K. McCaffrey

ENS., USC&GS

*See note by Chief of Party on following page

HYDROGRAPHIC SURVEY H-8166 (ECFP-1354)

ADDED NOTES BY CHIEF OF PARTY

Ending of the field season left several areas on this survey under-developed. Desirable additional development has been indicated on the boat sheet in red.

The eastern limit of the sheet fails to overlap prior survey H-6563 although it was extended to the project limit indicated on Chart 1208 as furnished this party. Additional lines should be run as indicated.

A leadline least sounding should be obtained on Stellwagen Rock if possible.

The 6 foot charted sounding at latitude 41° 56.6', longitude 70°33.6' was mis-applied to the boat sheet and searched for in the wrong place. Additional lines should be run in the vicinity.

Clarence R. Reed

Clarence R. Reed
CDR, USC&GS
OinC, East Coast Field Party

TIDE NOTE TO ACCOMPANY

Hydrographic Survey Sheet H-8166(Field No. ECFP 1354)

Tide data for the reduction of soundings was obtained from a portable automatic tide gage at State Pier, Plymouth Harbor, Mass. This gage was maintained by party personnel. The mean low water Plane of Reference on the tide staff, was furnished by the Washington Office.

STATION	LATITUDE	LONGITUDE	MLW ON STAFF
State Pier, Plymouth, Mass. (Not on sheet)	41° 57.57'	70° 39.77'	0.1

FATHOMETER CORRECTIONS

Hydrographic Survey Sheet H-8166(Field No. ECFP 1354)

The corrections tabulated below are based on an initial set at zero feet on the fathogram. Index corrections have been entered in the sounding volumes where the initial varied from zero feet.

All soundings were taken in feet.

Lch. 172

FATHOMETER NO. 715

8 July - 30 July 1954

CORRECTION	DEPTH	
A RANGE	From	To
+0.6	0.0	10.0
+0.4	10.1	22.0
+0.2	22.1	55.0
B RANGE		
+2.2	35.0	39.1
+2.0	39.2	47.0
+1.8	47.1	55.0
+1.6	55.1	63.0
+1.4	63.1	70.9
+1.2	71.0	78.8
+1.0	78.9	86.8
+0.8	86.9	90.0
C RANGE		
+0.6	70.0	75.0
+0.4	75.1	82.7
+0.2	82.8	90.6
0.0	90.7	98.6
-0.2	98.7	100.0

Lch. 82

FATHOMETER NO. 77

5 October - 28 October 1954

CORRECTIONS	Depth	
A RANGE	From	To
+0.2	0.0	26.0
0.0	26.1	55.0
B RANGE		
+0.2	35.0	40.2
+0.4	40.4	43.8

(CONT'D)

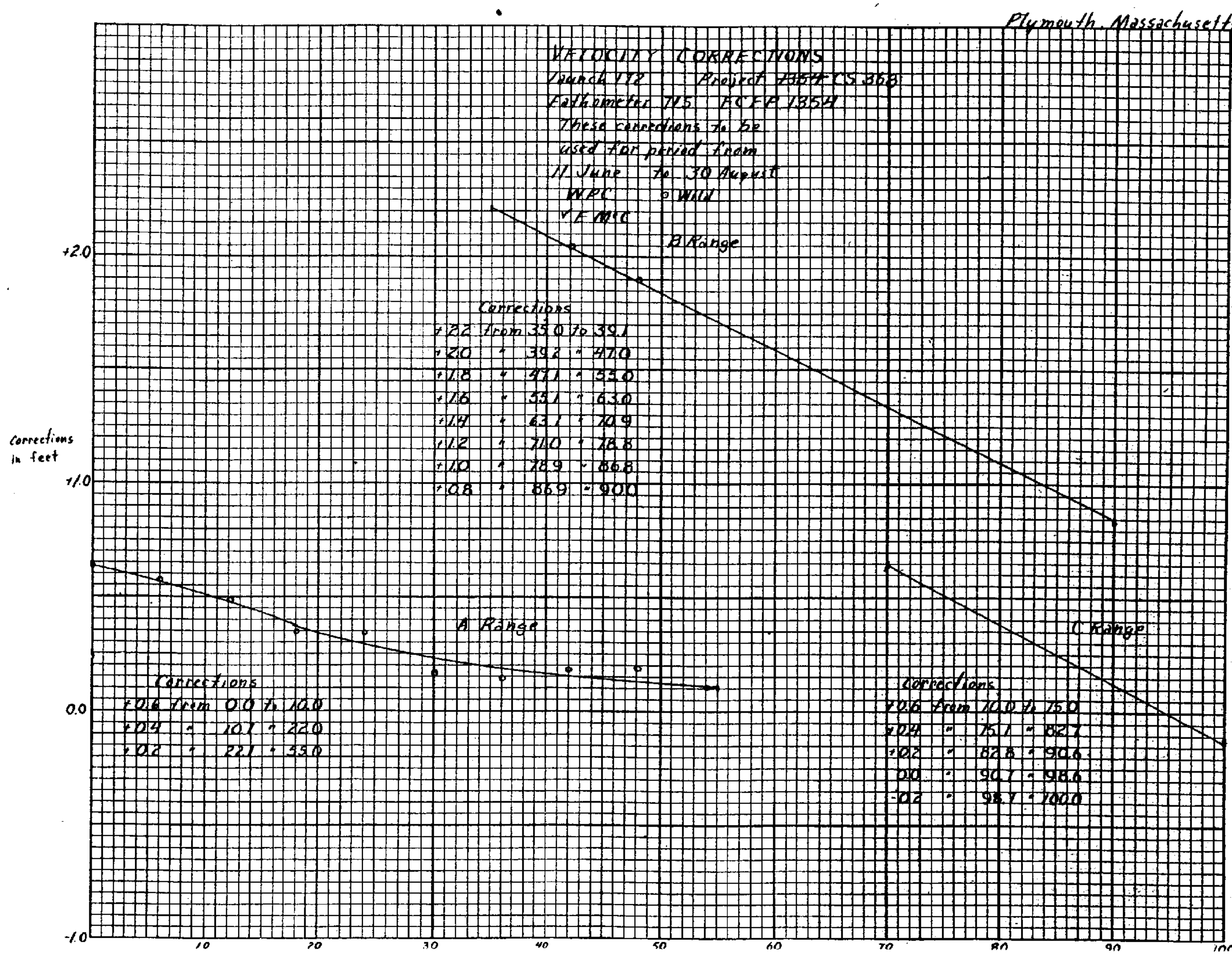
FATHOMETER CORRECTIONS (CONT'D)

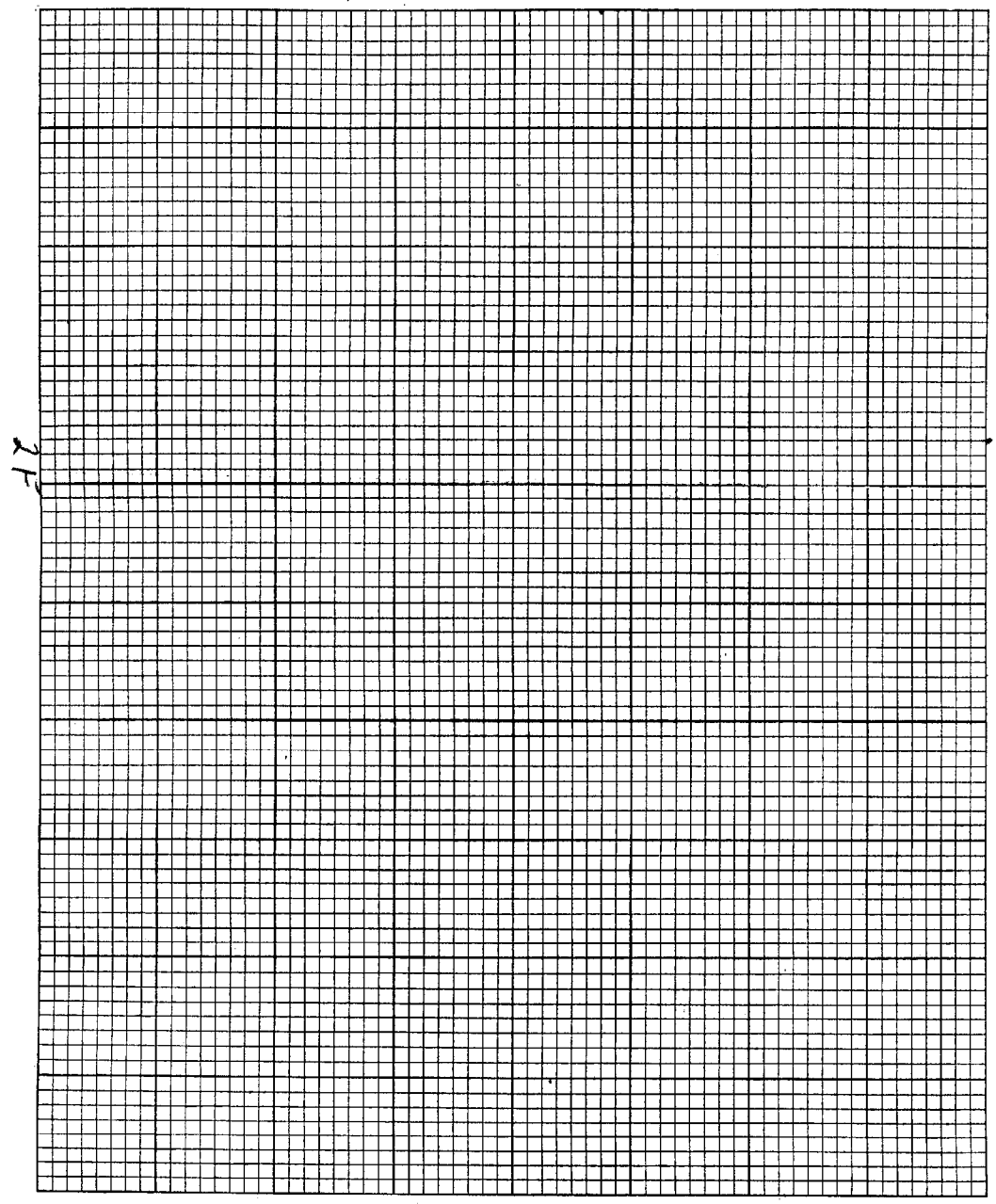
FATHOMETER NO. 77

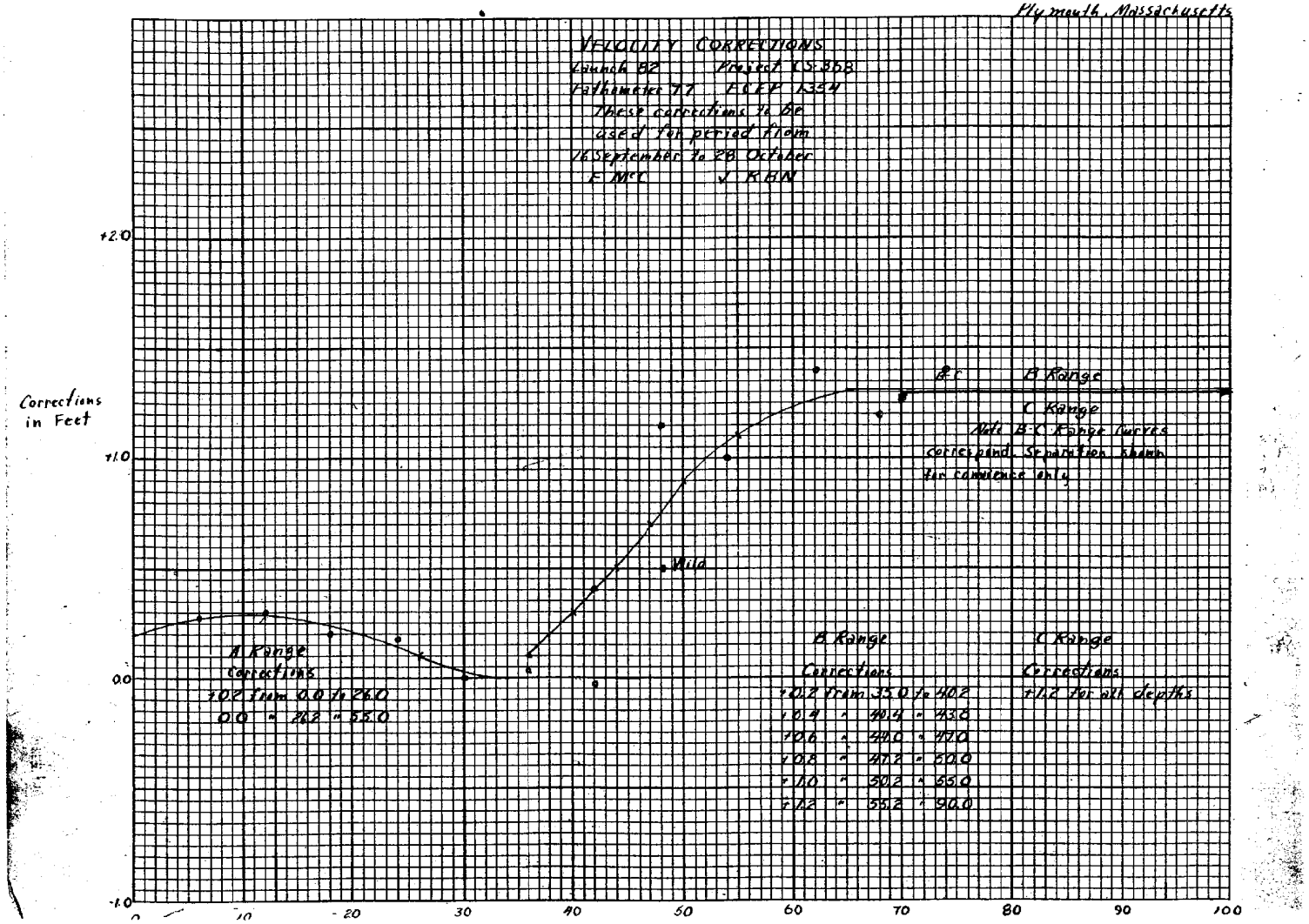
5 October - 28 October 1954

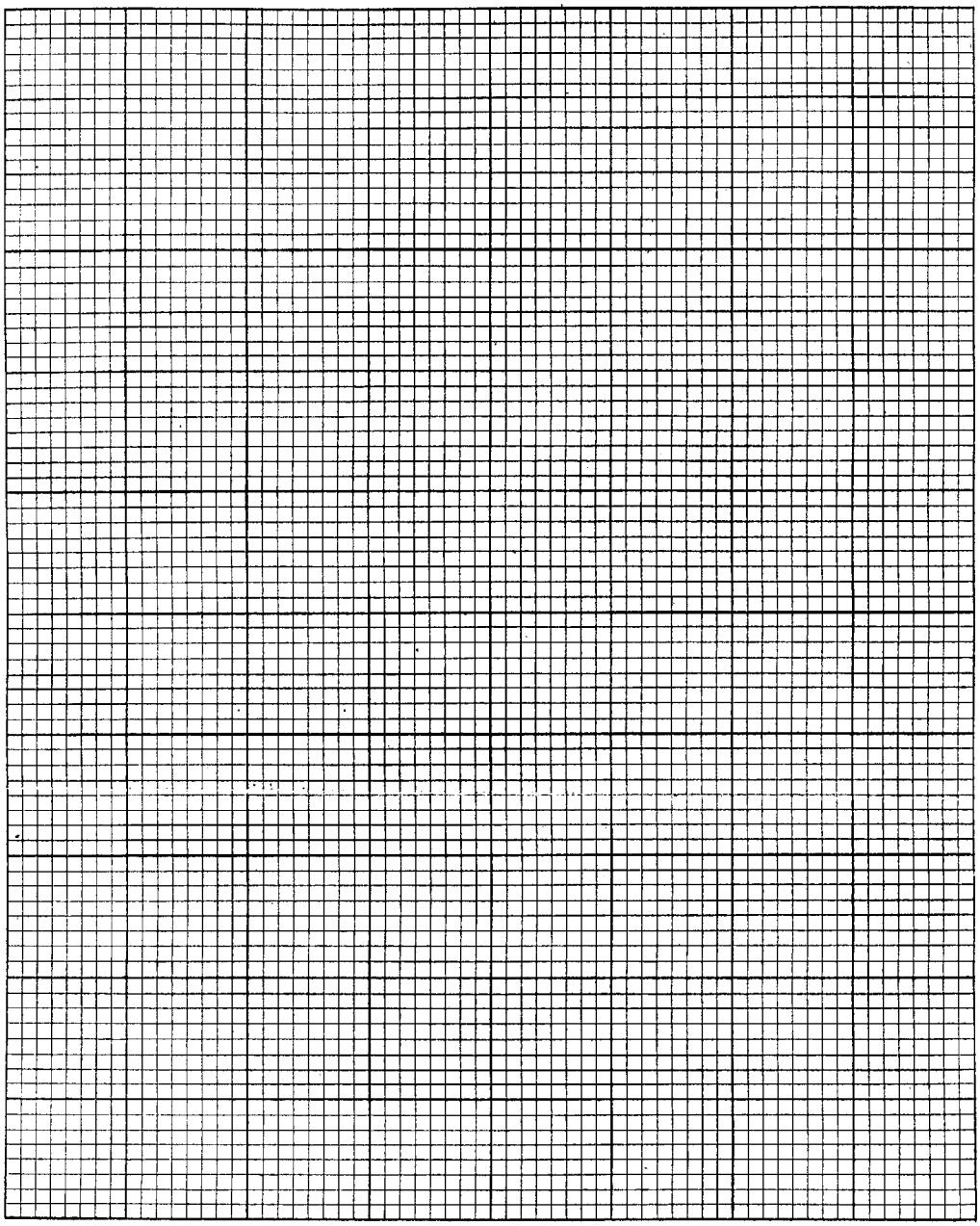
CORRECTIONS	DEPTH	
B RANGE	from	To
+0.6	44.0	47.0
+0.8	47.2	50.0
+1.0	50.2	55.0
+1.2	55.2	90.0
C RANGE		
+1.2	All depths	

Plymouth, Massachusetts






Plymouth, Massachusetts
VELOCITY CORRECTIONS
Launch BZ
Project XS-356
Pathfinder 77
FCEV A334
These corrections to be used for period from 16 September to 28 October
E McC
J KAN
Corrections in Feet
+2.0
+1.0
0.0
-1.0
0
10
20
30
40
50
60
70
80
90
100
Br
B Range
C Range
Note B C Range curves correspond. Separation shown for convience only
Wila
A Range Corrections
+0.2 from 0.0 to 26.0
0.0 = 26.2 = 55.0
B Range Corrections
+0.2 from 35.0 to 40.2
+0.4 = 40.4 = 43.0
+0.6 = 44.0 = 47.0
+0.8 = 47.2 = 50.0
+1.0 = 50.2 = 55.0
+1.2 = 55.2 = 90.0
C Range Corrections
+1.2 for all depths



STATISTICS TO ACCOMPANY HYDROGRAPHIC SHEET H-8166

(FIELD NO. ECFP -1354)

DATE 1954	DAY LTR	VOL. NO.	LEAD LINES	NO. OF POSITIONS	STAT. MI. SDG. LINES
8 July	a	1	0	100	16.2
9 "	b	1	1	111	17.2
13 "	c	2	1	85	13.7
14 "	d	2&3	1	155	25.2
16 "	e	3	0	143	21.0
22 "	f	3&4	1	142	21.9
23 "	g	4	1	131	20.4
26 "	h	4&5	2	98	14.2
27 "	j	5	3	102	16.7
30 "	k	5&6	5	120	17.9
		TOTALS	15	1187	184.4

Above for Launch #172

LAUNCH #82

5 Oct.	a	6	2	97	14.1
28 "	b	6	0	8	1.1
		TOTALS	2	105	15.2

Area Surveyed - 10/2 sq.st.mi.

APPROVAL SHEET FOR

HYDROGRAPHIC SURVEY H-8166(ECFP 1354)

The boat sheet and records for Hydrographic Survey H-8166 (ECFP 1354) have been inspected by me and are approved. Additional work required has been listed under "Added Notes by Chief of Party" at the end of the text of this Descriptive Report.

Clarence R. Reed

Clarence R. Reed
CDR, USC&GS
OinC, East Coast Field Party

LIST OF SIGNALS
To Accompany
H-8166

TRIANGULATION STATIONS

GRAY	PLYMOUTH, GRAY HOUSE, LARGE CHIMNEY, 1908-35
GUARD	GUARD, 1940 (MANOMET POINT C.G.)
INDIA	INDIA, 1940
	INDIAN HILL 2, 1941
MANO	MANOMET, 1835-1936
PLYM	PLYMOUTH, ROCKY POINT HOUSE CHIMNEY, 1908-33

MARKED TOPOGRAPHIC STATIONS SOURCE T-11180

PRIS, 1953

TOPOGRAPHIC STATIONS SOURCE T-11178

Ant Box Cab You

SOURCE T-11180

Abe Bag Chy Cot Hot Lag Low Rok She
Tab Tank Top

HYDROGRAPHIC STATIONS

Bob	Vol. 4, pg. 62; Vol. 5, Pgs. 21&22
Cat	Vol. 3, Pgs. 51 & 59; Vol. 4, pg. 19
Hil	Vol. 2, pg. 29
Lee	Vol. 4, pg. 24
Tel	Vol. 4, Pgs. 62 & 65

ADDENDUM
To Accompany

HYDROGRAPHIC SURVEY H-8166 (Field No. ECFP-1354)

CONTROL

A considerable amount of difficulty was experienced during the smooth plot of this survey because of the frequent use of near swingers and slender angles. This was particularly noticeable along the Eastern limits of hydrography at maximum distances from stations.

The following positions were not smooth plotted because of weak fixes or apparently erratic observations of angles:

Vol. 5	Positions	100 to 102j *N.P.*
	"	1 to 7k - *plotted O.K.*
	"	96 to 98h *N.P.*
	"	66 to 67k } *plotted O.K.*
	"	56k }
Vol. 6	Positions	8 to 13a *N.P.*
Vol. 7	Positions	27 to 32b *N.P.*
	"	53 to 60a *N.P.*
	"	1 to 8b *N.P.*
Vol. 8	Positions	1 to 3c - *plotted O.K.*

SOUNDINGS

Particular attention should be given the following shoal indications, which were not smooth plotted as they were called strays by the field party:

Lat. 41-54.67 Long. 70-32.35	Vol. 6	22" after pos. 20a	valid sdg
Lat. 41-54.50 Long. 70-31.99	Vol. 1	4" after pos. 51a	valid sdg
Lat. 41-54.72 Long. 70-32.40	Vol. 5	10" after pos. 47h	valid sdg
Lat. 41-54.68 Long. 70-32.35	Vol. 5	21" after pos. 56h	valid sdg

(Vol. 6) destroyed

Pos. 1 thru 8b (Lch. 82) are being submitted on an overlay because of the poor quality of the fathogram (*Plotted; O.K.*)

All soundings were reduced in the Processing Office with a reducing template.

Norfolk, Va.
23 Nov. 1956

Respectfully submitted,

Hugh L. Proffitt
Cartographer.

RHC

Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Rev. Apr. 1950

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coastal Surveys~~ 3 January 1957

Division of Charts: R. H. Carstens

Plane of reference approved in
8 volumes of sounding records for

HYDROGRAPHIC SHEET 8166

Locality Cape Cod Bay, Mass.

Chief of Party: C. R. Reed & M. T. Paulson in 1954 - 1955
Plane of reference is mean low water, reading
0.1 ft. on tide staff at Plymouth
15.8 ft. below B. M. 10 (1954)

Height of mean high water above plane of reference is
9.5 feet.

Condition of records satisfactory except as noted below:

William Shapiro

Chief, ~~Division of~~ Tides Branch

U. S. GOVERNMENT PRINTING OFFICE 877933

GEOGRAPHIC NAMES

Survey No. H-8166

Name on Survey	A On Chart No.	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H	K U. S. Light List	
Massachusetts		(title)							BGN	1
Cape Cod Bay										2
Indian Hill										3
Stellwagen Rock *										4
Manomet Pt	✓								BGN	5
Rocky Pt	✓									6
White Horse Rock *										7
Mary Ann Rocks *										8
Stone Horse Rock *										9
										10
* see chart 1208 for placement after fixing.										11
				Names approved 12-26-56. L. Heck						12
										13
										14
State Pier, Plymouth				(tide station)						15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25
										26
										27

M 234

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8166....

Records accompanying survey:

Boat sheets ..1..; sounding vols. ..8..; wire drag vols. .....;

bomb vols. .....; graphic recorder rolls 7-Envelopes

special reports, etc. 1-Descriptive report, 1-Smooth Sheet,....

and 1-Overlay of hydrography.....

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet		1532
Number of positions checked		131
Number of positions revised		95 (many small <s)
Number of soundings revised (refers to depth only)		440
Number of soundings erroneously spaced		0
Number of signals erroneously plotted or transferred		0
Topographic details	Time	24 hrs.
Junctions	Time	24 hrs
Verification of soundings from graphic record	Time	10 hrs

Verification by C.C. Helmer .....Total time 229 hrs Date 3/18/57 - 6/18/57

Reviewed by ..... J.A. Dinsmore ..... Time 4.9.. Date 9/18/57

M-2232-1

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8166 FIELD NO. ECFP-1354

Mass., Cape Cod Bay, Indian Hill to Rocky Point

Surveyed - July-Oct. 1954 & July, 1955 Scale 1:10,000

PROJECT NO. 1368

Soundings:

808 Depth Recorder
Hand lead
Pole

Control:

Sextant fixes on shore signals

Chief of Party - C. R. Reed & M. T. Paulson
Surveyed by - R. B. Noble & E. K. McCaffrey
Protracted by - A. K. Schugeld
Soundings plotted by - A. K. Schugeld
Verified and inked by - C. R. Helmer
Reviewed by - T. A. Dinsmore
Inspected by - R. H. Carstens

Date 18 Sept. 1957

1. Shoreline and Signals

The shoreline originates with unreviewed air-photographic surveys T-11178 and T-11180 of 1952-53.

The source of the signals is given in the Descriptive Report.

2. Sounding Line Crossings

Depths at crossings are in good agreement.

3. Depth Curves and Bottom Configuration.

The usual depth curves are adequately delineated. It was impracticable to run sounding lines in several inshore localities because of foul conditions.

Much of the bottom is smooth. However, many dangers to navigation are found within the limits of the survey as the area is liberally marked with pinnacle rocks and prominent shoals.

4. Adjoining Surveys

Adequate junctions were effected between the present survey and H-6563 (1940) on the north and east and with H-6562 (1940) on the south. The junction with H-8165 (1954-55) on the northwest will be considered in the review of that survey.

5. Comparison with Prior Surveys

a. H-516 (1854-1905) 1:80,000 H-1339 (1875) 1:10,000
H-578 (1856) 1:40,000 H-3413 (1912) 1:20,000

These prior surveys taken together cover the area of the present survey. The prior surveys for the most part show very few sounding lines within the area. A comparison of the prior and present depths reveals no changes in bottom. Differences in depths between the prior and present survey are attributed to the irregularities in the bottom and to the weak control on the early small-scale reconnaissance surveys.

The 16-ft. sounding charted in lat. 41° 56.66', long. 70° 33.87', from H-1339 should be disregarded. Falling in present depths of 24-26 ft., the prior sounding is considered to be out of position and should actually fall about 100 meters southeastward where comparable depths were obtained on the present survey.

A few critical soundings have been retained from the prior surveys. With these additions, the present survey is adequate to supersede the prior surveys within the common area.

b. H-3776 (1915-16) W. D.

This wire-drag survey covers the offshore portion of the present survey. No conflicts exist between the effective drag depths and depths on the present survey.

The 36-ft. sounding previously charted in lat. 41° 54.43', long. 70° 30.92', from H. 3776 W. D. should be disregarded. Falling in smooth-bottom depths of 50 ft. on the present survey, the prior sounding was found to be misplotted from a recording error and has been replotted in lat. 41° 54.80', long. 70° 30.79', where it has been carried forward to the present survey.

The twenty-six soundings, which have been carried forward to the present survey from H-3776 W. D. attest to the value of wire-drag surveys in an area of so irregular bottom. Numerous bottom characteristics were also retained from this prior survey.

6. Comparison with Chart 1208 (Latest print date 6/10/57)

A. Hydrography

Charted hydrography originates principally with the present survey prior to verification and review. Numerous revisions have been made to smooth-sheet soundings during verification. A notable example occurs in lat. 41° 54.67', long. 70° 31.7', where a 19-ft. sounding charted from the present survey before verification was subsequently revised to 23 ft.

The charted hydrography is entirely superseded by the present survey.

B. Aids to Navigation

No aids to navigation are charted within the limits of the present survey.

7. Conditions of Survey

a. The sounding records are complete; the Descriptive Report covers most matters of importance.

b. The smooth plotting was generally satisfactory. An excessive number of sounding line fixes in the area east and southeast of Manomet Point were not rigidly positioned due to the use of small angles and near "swingers", and required adjustment on the smooth sheet during verification to effect an agreement with a selected net of more rigidly controlled adjacent hydrography. The Processing Office omitted the smooth plotting of 55 positions because of weak fixes or apparently erratic observations of angles.

c. The profusion of possible side echos from pinnacles and grass traces on the fathograms caused considerable uncertainty in the interpretation of the fathograms. Handlead investigation in some of the areas would have been helpful in clarifying the interpretation and might have revealed that a reduction in gain would have been warranted in providing a more legible record.

8. Compliance with Project Instructions

The survey adequately complies with the Project Instructions.

9. Additional Field Work

With the retention of about thirty prior soundings, the survey is considered basic and no additional field work is recommended. Conspicuous shoal indications appearing in the offshore area would require further investigation had not a wire-drag survey been previously accomplished.

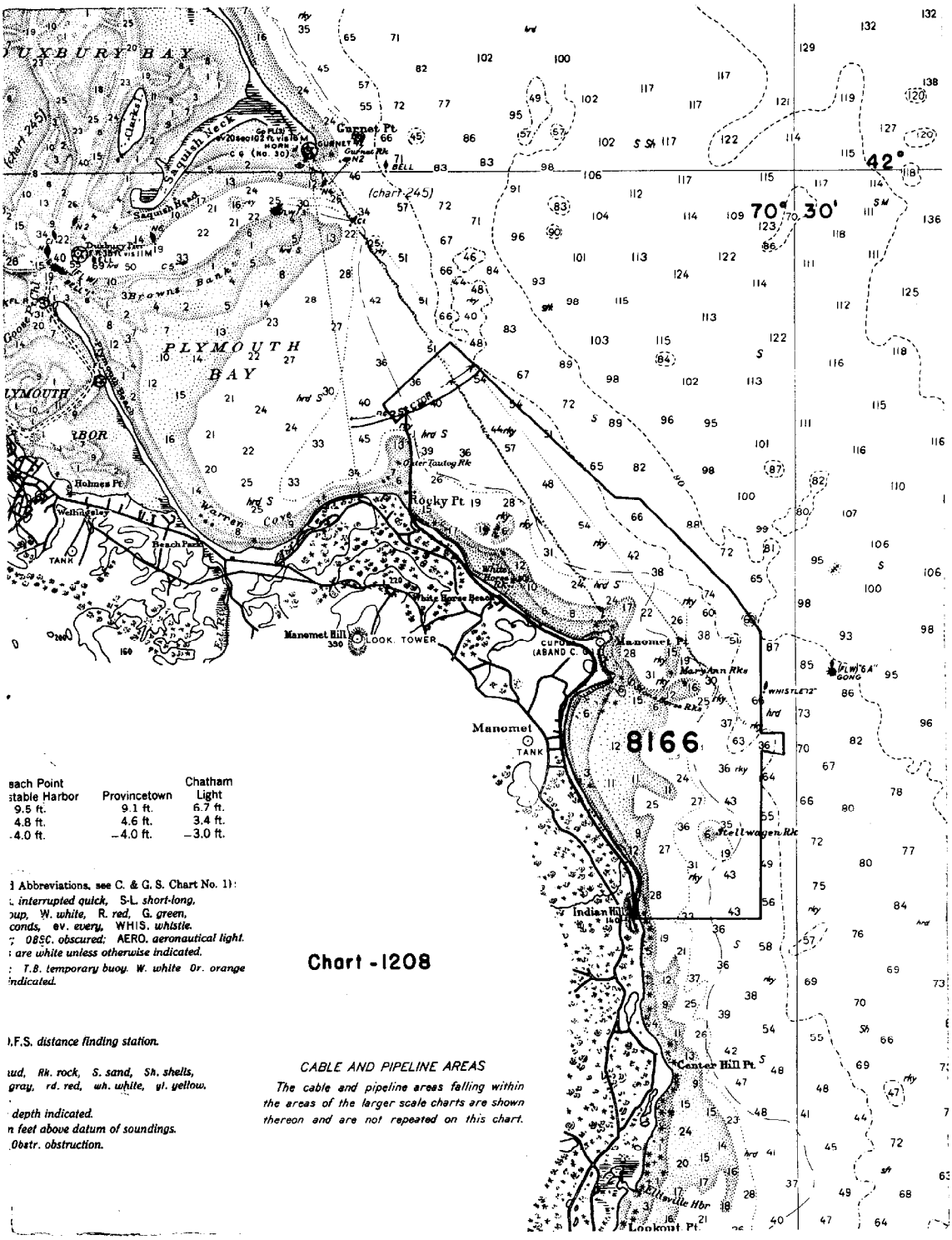
Examined and Approved:

Wallace A. Bruder
for Max G. Ricketts
Chief, Nautical Chart Branch

Charles A. Schanck
Chief, Division of Charts

Karl B. Jeffers 10/22/57
Karl B. Jeffers
Chief, Hydrography Branch

Samuel B. Grenell
Chief, Division of Coastal Surveys



each Point		Chatham
stable Harbor	Provincetown	Light
9.5 ft.	9.1 ft.	6.7 ft.
4.8 ft.	4.6 ft.	3.4 ft.
4.0 ft.	–4.0 ft.	–3.0 ft.

Abbreviations, see C. & G. S. Chart No. 1):
interrupted quick, S-L. *short-long,*
oup, W. *white,* R. *red,* G. *green,*
conds, ev. *every,* WHIS. *whistle.*
; OBSC. obscured; AERO. *aeronautical light.*
are white unless otherwise indicated.
T.B. temporary buoy. W. white Or. orange indicated.

I.F.S. *distance finding station.*

ud, Rk. rock, S. sand, Sh. shells, gray, rd. red, wh. white, yl. yellow.

depth indicated.
n feet above datum of soundings.
Obstr. obstruction.

Chart - 1208

CABLE AND PIPELINE AREAS

The cable and pipeline areas falling within the areas of the larger scale charts are shown thereon and are not repeated on this chart.

NAUTICAL CHARTS BRANCH

SURVEY NO. H-8166

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
Nov. 22, 1957	1208	D. H. Benson	~~Before~~ Before Complete ~~After~~ Before Verification ~~and~~ Review Full application made
8-21-57	245	R. K. McLaughlin	~~Before~~ After Verification and during Review. Part. applied.
12/29/59	Reconstruction 245	N. W. Burgoyne	~~Before~~ After Verification and Review Completely Applied. JMA
3/31/60	1208	Helmer	~~Before~~ After Verification and Review Completely applied east of 70°34.5'. Remainder to be applied thru #345 (reconst)
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.